

Biological Evaluation:
The Potential Effects of the Proposed Reissuance
of the NPDES General Permit for New and Existing Sources
in the Oil and Gas Extraction Point Source Category
for the Western Portion of the Outer Continental Shelf
of the Gulf of Mexico

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Summary

This biological evaluation accounts for the direct, indirect, and cumulative effects of the reissuance of the National Pollutant Discharge Elimination System (NPDES) permit on Federally-listed threatened and endangered species. Thirteen federally listed threatened and endangered species under NOAA Fisheries' jurisdiction might occur within the action area (Outer Continental Shelf of the Gulf of Mexico). EPA has determined that due to the geographic distribution of the listed species, the proposed action will not affect the including the northern right whale (*Eubalaena glacialis*), blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), sei whale (*Balaenoptera borealis*) humpback whale (*Megaptera novaeangliae*), the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), West Indian manatee (*Teicheschus manatus latirostris*), smalltooth sawfish (*Pristis pectinata*), elkhorn coral (*Acropora palmate*), and the staghorn coral (*Acropora cervicornis*). Based on the enclosed analysis, EPA has determined that the proposed action **may affect but is unlikely to adversely affect** the sperm whale (*Physeter macrocephalus*), or the following listed turtles: Kemp's ridley (*Lepidochelys kempii*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), green (*Chelonia mydas*) nor is the proposed action likely to result in destruction or adverse modification of designated critical habitat.

Information obtained from NMFS reveals that the smalltooth sawfish and elkhorn and staghorn coral species are not present in the area covered under the general permit. Since their range is outside the scope of the general permit, no further discussion of the species is included in this Biological Evaluation.

Action

The action EPA is taking is the reissuance of the NPDES general permit for New and Existing Sources in the Oil and Gas Extraction Point Source Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico (Permit No. GMG290000) hereafter referred to as the OCS general permit. The permit regulates existing source facilities, New Source facilities, and new dischargers in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A), located in and discharging to the Outer Continental Shelf offshore of Louisiana and Texas. The discharge of produced water to that portion of the Outer Continental Shelf from Offshore Subcategory facilities located in the territorial seas of Louisiana and Texas is also authorized by this permit

The permit has retained the limitations and conditions of the expiring permit. The existing permit limitations conform with the Oil and Gas Offshore Subcategory Guidelines and contain additional requirements to assess impacts from the discharge of produced water to the marine environment, as required by Section 403(c) of the Clean Water Act.

The following changes to the expiring permit were included in the reissued permit:

- New design, construction, and operational requirements on cooling water intake

structures are required.

- Studies are required to ensure that the new cooling water intake structure requirements effectively reduce impingement and entrainment of aquatic life.
- Sub-lethal effects are required to be measured and used to determine compliance with the whole effluent toxicity limits.
- New test methods are required for determining compliance with the cadmium and mercury limits for stock barite.
- Minor clarifications were included for: types of activities covered; pit cleaning and other wash water; end of well monitoring; sediment toxicity test averaging; the drilling fluids discharge rate limitation; discharges associated with dual gradient drilling; toxicity testing for miscellaneous discharges; and calculation of the produced water critical dilution for toxicity testing.
- Toxicity testing is no longer required for miscellaneous discharges which are treated with hypochlorite.

EPA has issued that the permit be reissued for a five year term; however, the permit may be reopened if it is determined that additional cooling water intake structure requirements are needed to protect aquatic life.

Regulatory History

On April 3, 1981 (see 46 FR 20284), EPA published three final general NPDES permits authorizing discharges from facilities in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category which were located offshore of Louisiana and Texas. Two of those permits, TX0085651 and LA0060224, authorized discharges from facilities located in the territorial seas off Louisiana and Texas. The third permit, TX0085642, authorized discharges from facilities located seaward of the outer boundary of the territorial seas off Louisiana and Texas, an area commonly known as the Outer Continental Shelf. The Outer Continental Shelf General Permit did not include several facilities located near the Flower Garden Banks, an area with sensitive biological features approximately 120 miles southeast of Galveston, Texas. Twelve facilities in the vicinity of the Flower Garden Banks were authorized to discharge under individual permits. The 1981 general permits implemented "Best Practicable Control Technology Currently Available" (BPT) Effluent Limitations Guidelines for the Offshore Subcategory (see 40 CFR 435). Those permits contained daily maximum oil and grease limits of 72 mg/l for produced water discharges, a prohibition of the discharge of oil based drilling fluids, a limit of no free oil for drilling fluids, drill cuttings, deck drainage and well treatment fluids, and 1 mg/l residual chlorine for sanitary waste water.

The permits expired April 3, 1983 and were reissued on September 15, 1983 (48 FR

41494) with an expiration date of June 30, 1984. The permits were issued for a short period of time because National Effluent Limitations Guidelines for Best Available Technology Economically Achievable were expected to be promulgated by 1983 and again by 1984. The limitations contained in the permits were unchanged in the 1983 reissuance, however, some changes were made for facilities located near the Flower Garden Banks. Lease blocks: North Padre Island 962 and Garden Banks 113 through 132, which were previously excluded from the permit, were authorized to discharge. High Island South block A392 was excluded from the permit because of its potential effects. The Louisiana Territorial Seas General Permit was reissued on November 7, 1997, (62 FR 59687) and renumbered as LAG260000. The Texas Territorial Seas General Permit was reissued on September 6, 2005, (70 FR 53008) as TXG260000.

The Outer Continental Shelf General Permit was reissued on July 9, 1986 (51 FR 24897). In that action EPA Region 6 issued a joint permit with Region 4 which authorized discharges from facilities located in the Outer Continental Shelf throughout the Gulf of Mexico. That permit, numbered GMG280000, prohibited the discharge of oil based drilling fluids, oil contaminated drilling fluids, drilling fluids containing diesel oil, and drill cuttings generated using oil based drilling fluids. New limits were included in the permit for: suspended particulate phase toxicity in drilling fluids, the drilling fluid discharge rate near areas of biological concern, and for free oil in drilling fluids and drill cuttings. That general permit expired on July 1, 1991.

On November 19, 1992, EPA Region 6 reissued the NPDES general permit for the Western Gulf of Mexico Outer Continental Shelf (57 FR 54642) covering operators of lease blocks in the Offshore Subcategory of the Oil and gas Extraction Point Source Category, located seaward of the outer boundary of the territorial seas of Texas and Louisiana. As a part of that reissuance, new limits for produced water toxicity were added, as well as new limits for cadmium and mercury in stock barite. A prohibition on the discharge of drilling fluids to which mineral oil was also included in the permit. That general permit was modified on December 3, 1993, to implement Offshore subcategory effluent limitations guidelines which were promulgated March 4, 1993 (58 FR 12504) and to include recalculated produced water critical dilutions. A general permit covering New Sources in that same area of coverage was issued and combined with the Western Gulf of Mexico Outer Continental Shelf general permit on August 9, 1996 (61 FR 41609). The permit expired on November 19, 1997 and was reissued in two parts on November 2, 1998 (63 FR 58722), and April 19, 1999 (64 FR 19156).

In the 1998 reissuance, EPA Region 6 authorized new discharges of seawater and freshwater to which treatment chemicals, such as biocides and corrosion inhibitors, have been added. The maximum discharge rate limit for produced water was removed and the critical dilutions required to be met for the produced water toxicity limit were updated based on the new discharge rates and more current models. To account for advances in drilling fluid technology, the permit was modified on December 18, 2001 (66 FR 65209), to authorize discharges associated with the use of synthetic based drilling fluids. Additional monitoring requirements were also included at that time to address hydrostatic testing of existing piping and pipelines and those discharges were authorized. That permit expired on November 3, 2003, and was reissued

on October 7, 2004 (69 FR 60150), with an expiration date of November 4, 2007. EPA made the following changes to the permit with that reissuance. Produced water monitoring requirements were included for facilities located in the hypoxic zone. The discharge prohibitions at National Marine Sanctuaries were clarified in an attempt to better reflect National Oceanic and Atmospheric Administration regulations. See 15 C.F.R. Part 922. The variability factor for use in determining compliance with the permit's limits for sediment toxicity and biodegradation was removed. An allowance was included for blending of compliant synthetic base fluids in drilling fluids. The requirement to submit fourteen day advanced notification of intent to be covered by the permit is removed. The final discharge monitoring report will be required to be submitted along with the notice of termination. Clarifications were made in the definition of minor miscellaneous discharges to better represent deep water technologies. Other clarifications were made to the permit's miscellaneous discharge requirements to show that toxicity testing is not required for non-toxic dyes. The toxicity limit for sub sea fluids was decreased from 200 mg/l to 50 mg/l. The permit was issued for a three year term rather than the typical five year term so that the results from the produced water hypoxia study could be addressed in a timely manner if additional permit conditions were found to be warranted.

ESA Section 7(a)(2) Consultation History

EPA originally consulted with the National Marine Fisheries Service (NMFS), Southeast Regional Office on the joint Region 4 and 6 general permit when it was issued in 1986. NMFS concurred with EPA's determination that discharges authorize by the permit would not be likely to adversely affect threatened or endangered species or their critical habitat by letter, dated May 24, 1988.

EPA again consulted with NMFS 1991, regarding reissuance of the NPDES general permit for the Outer Continental Shelf of the Western Gulf of Mexico for discharges in federal waters from Louisiana and Texas. The Service concurred, via letter dated June 28, 1991, that populations of endangered/threatened species under purview of the Service would not be adversely affected by the proposed action.

In 1993, EPA consulted with the Southeast Region regarding the proposed NPDES New Source general permit (GMG390000) for discharges in the Offshore Subcategory of the Oil and Gas Extraction Point Source category. The Service concurred, via letter dated November 4, 1993, that populations of endangered/threatened species under the Service's purview would not be adversely affected by the proposed action.

EPA modified the NPDES permit for new and existing sources in the oil and gas extraction point source category for the western portion of the Outer Continental Shelf of the Gulf of Mexico (Permit No. GMG290000). The proposed modification addressed development of new types of drilling fluids used in offshore oil and gas exploration and development activities. Given the more stringent discharge prohibitions and limitation in the proposed permit, the Service stated in its November 27, 2001 concurrence letter, that the effects of the proposed action on listed species were believed insignificant and not likely to adversely affect any ESA-

listed species under the Service purview.

When the permit was reissued in 2004, NMFS again concurred, by letter dated July 12, 2004, with EPA's determination that discharges authorized by the permit were not likely to adversely affect threatened or endangered species or their critical habitat. With this current permit reissuance, EPA again sought concurrence with its not likely to adversely affect determination and submitted the permit to NMFS for concurrence on December 21, 2006.

The Minerals Management Service (MMS) recently completed ESA Section 7 consultation for the 2007 – 2012 area-wide lease sale Environmental Impact Statement. The Biological Opinion produced by NMFS stated that metals associated with discharges from oil and gas extraction facilities would not adversely affect threatened or endangered species. NMFS also concluded that MMS's proposed action would not appreciably reduce the likelihood for survival or recovery for any of the listed species.

Geographic Area

The general permit covers existing source facilities, new source facilities, and new dischargers in the offshore subcategory of the oil and gas extraction point source category located in and discharging to lease blocks in the Outer Continental Shelf of the Western Gulf of Mexico. The permit also authorizes discharges to the Outer Continental Shelf of the Western Gulf of Mexico from facilities located in the territorial seas offshore of Louisiana and Texas. Operators with platforms located near the boundary of the territorial seas are allowed to transfer waste water from a platform located in the territorial seas to one located in the Outer Continental Shelf to be separated from the oil and discharged at that location. This does not, however, include drilling fluids or drill cuttings from facilities where the wellhead is located in the territorial seas. Those discharges are prohibited in the territorial seas based on Offshore Subcategory effluent limitations guidelines, and thus are not authorized to be transferred to the Outer Continental Shelf and discharged.

Description of Federally Listed Threatened and Endangered Species

Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

The gulf sturgeon, an anadromous fish, is found in riverine environments during the summer months and migrates to warmer water in estuaries and the near shore Gulf of Mexico during winter. Adult Gulf sturgeon usually spend approximately three quarters of the year in rivers and one quarter (cooler months) in estuaries or Gulf of Mexico waters. Younger Gulf sturgeon do not tend to migrate to open waters of the Gulf, but remain in riverine and estuarine environments. The fish has a sub-cylindrical body and a snout extending from the lower surface of the head which is blade-like in shape. Adult Gulf sturgeon generally grow to 227 centimeters in length. This sub-species is a bottom feeder tending to consume amphipods, crustaceans,

oligochaetes, polychaetes and chironomid and ceratopogonid larvae. They have been found to eat during the three to four months they are in the marine environment and fast the remainder of the year while in the freshwater environment. Commercial fishing and habitat destruction are the main causes for the decline of this species. Means of habitat destruction include construction of dams which interfere with migration, dredging, and decreased ground water flows.

Northern Right Whale (*Eubalaena glacialis*)

The northern right whale is a medium sized baleen whale with a length up to 55 feet and weight up to up to 140,000 pounds. Its diet consists mainly of copepods and juvenile euphausiids (krill). Northern right whales generally have been observed from Greenland to the coast of Florida in the north Atlantic. They generally spend the spring, summer, and fall off the coast of New England and Canada and migrate farther south during the winter months. However, some whales remain in the north throughout the winter. Areas where the species tends to concentrate most often include: coastal Georgia and Florida, the Great South Channel east of Cape Cod, Cape Cod Bay and Massachusetts Bay, the Bay of Fundy, and Browns and Baccaro Banks south of Nova Scotia. The northern right whale is thought to exist in the Gulf of Mexico; although, there have been only two sightings since 1900. One of those sightings was off the coast of Florida, and the other sighting was a calf stranding on the Texas Coast. The main reason for decline of this species is historic hunting. Existing human impacts to this species include: collisions with ships, entrapment or entanglement in fishing gear and habitat destruction such as dredging or sewer discharges. The species is thought to tend to avoid offshore oil and gas operations.

Blue Whale (*Balaenoptera musculus*)

The blue whale is the largest of the whales and, in the North Atlantic, can grow to 89 feet in length and weigh nearly 300,000 pounds. Krill is the main food of this species. They range from the subtropics to Baffin Bay and the Greenland Sea, but are rarely seen in continental shelf waters along the eastern coast of the United States. Blue whales have been known to occasionally stray into the Gulf of Mexico. The historic decline in this species is thought to be the result of hunting, which has since ceased. On-going human impacts include: collisions with ships, disturbance by vessels, entrapment and entanglement in fishing gear, acoustic and chemical pollution, and military operations.

Finback Whale (*Balaenoptera physalus*)

The finback whale is the second largest whale species, growing to more than 75 feet in length and 150,000 pounds. This species is found throughout the North Atlantic from the Gulf of Mexico northward to the edges of the polar ice cap and tend to occur over the continental shelf and slope in greater than 650 feet of water. Fin whales are thought to migrate seasonally and feed in more northerly latitudes while fasting in southerly latitudes. Their diet consists of krill, capelin, herring, and sand lance. Like the other endangered whale species, the reason for

decline of the finback whale is historic hunting. Existing human impacts include: collisions with ships, disturbance of vessels, entrapment and entanglement in fishing gear, habitat degradation, and military operations. Presently, hunting in the North Atlantic only occurs in Greenland. Under the International Whaling Commission's aboriginal subsistent whaling authorization 20 are allowed to be taken each year.

Sei Whale (*Balaenoptera borealis*)

In the western North Atlantic, sei whales are known to occur from western Greenland to the southeastern United States. Like other whales, they tend to spend the summer in the northern latitudes and winter farther south. They tend to prefer deep water and can be found over the continental slope, basins between banks, and submarine canyons. Sei whales do not normally enter semi-enclosed waters such as the Gulf of Mexico or the Gulf of Saint Lawrence. However, there are recorded strandings along the northern coast of the Gulf of Mexico. Their preferred food consists of calanoid copepods and krill. Major human impacts to the species include: collisions with ships, disturbance from vessels, entrapment and entanglement in fishing gear, and military operations.

Humpback whale (*Megaptera novaeangliae*)

The humpback whale grows in length up to 59 feet and can weigh up 97,000 pounds. Diet of the humpback whale consists of krill, other large zooplankton, and small schooling fish. This species is known to occur in all ocean basins worldwide and it generally inhabits areas over the continental shelves, their slopes, and near some oceanic islands. Humpback whales are migratory, summering in higher latitudes (35 to 65 degrees) and wintering in tropical or temperate latitudes (10 to 23 degrees). Feeding is thought to mainly occur in the more productive summer range. They are not thought to normally inhabit the Gulf of Mexico. The only known observations in the Gulf were off the Cuban coast in 1918 and Tampa Bay in 1962 and 1989. Historic hunting led to the decline of the species. Existing causes of human impact are: entrapment and entanglement in fishing gear, collisions with ships, and acoustic disturbance from ships, and aircraft.

Sperm whale (*Physeter macrocephalus*)

The sperm whale is the largest of the toothed whales average 62 feet in length and can weigh as much as 120,000 pounds. They feed on a large deep water squid and a variety of fish. This species occurs throughout most of the oceans from the tropics to the polar ice caps. Sperm whales generally occupy deep waters and are rarely seen over the continental shelf. Like the other whale species, historic hunting resulted in their decline. Existing human impacts are: entrapment and entanglement in fishing gear, collisions with ships, and acoustic disturbance from ships, and aircraft.

Kemp's Ridley Turtle (*Lepidochelys kempii*)

The Kemp's ridley is one of the smallest sea turtles. Adult turtles are generally less than 99 pounds with a straight carapace of approximately 2.1 feet in length. They are thought to be shallow water benthic feeders and mainly eat crabs. Kemp's ridley turtles are known to range as far north as New England during the summer months. In the Gulf of Mexico, the species is found mainly in coastal areas. Hunting of both turtles and eggs contributed to the decline of this species. Existing threats include: development and human encroachment of nesting beaches, erosion of beaches, vehicular traffic on beaches, fisheries, oil spills, floating debris, dredging, and explosive removal of old oil and gas platforms.

Loggerhead Turtle (*Caretta caretta*)

Adult loggerhead turtles average 249 pounds weight and 3 feet in straight carapace length. They tend to inhabit the continental shelf and estuaries in a range from Newfoundland to Argentina and concentrate nesting in the temperate zones and sub-tropics. Significant nesting assemblages in the United States occur along the Georgia, North Carolina, and South Carolina coasts and along the Gulf coast of Florida. Foraging areas for adult loggerheads include the Gulf of Mexico. The diet generally consists of gastropod and pelecypod molluscs and decapod crustaceans. Post hatchlings also consume macro-plankton and *Sargassum*. Threats include: beach erosion, beach armoring, artificial lighting, mechanical beach cleaning, recreational beach equipment and vehicles, non-native vegetation, poaching, dredging, pollution, marina and dock development, oil spills, oil development on live bottoms that disrupt or smother foraging grounds with sediments and drilling fluids, oil and tar discharged during pumping of bilges, underwater explosions, fisheries, ingestion of marine debris, and boat collisions.

Leatherback Turtle (*Dermochelys coriacea*)

The leatherback turtle is the largest turtle species with adults generally weighing 450 to 1530 pounds and having a carapace length of 4.5 to 6 feet. There have been few sightings of Leatherback turtles in the Gulf of Mexico. Although little information is available, the diet of this turtle is thought to mainly consist of jellyfish. Existing threats to this species include: commercial shrimping, oil spills, and boat collisions.

Hawksbill Turtle (*Eretmochelys imbricata*)

The hawksbill is a medium sized turtle averaging approximately 2.8 feet in curved carapace length with a weight of approximately 176 pounds. This species can occur near all of the states on the Gulf of Mexico, and sighted most often in Florida and Texas. Seventy seven sightings were reported along the Texas coast from 1972 to 1984. Nesting in the continental United States only occurs in southeastern Florida and the Florida Keys. Sponges are the principle diet of hawksbill turtles. Threats to this species include: poaching, oil spills, vessel anchoring and groundings, artificial lighting at nesting sites, mechanical beach cleaning, increased human presence, beach vehicular driving, entanglement at sea, ingestion of marine

debris, commercial and recreational fisheries, water craft collisions, sedimentation and siltation, and agricultural and industrial pollution.

Atlantic Green Turtle (*Chelonia mydas*)

The Atlantic green turtle is an herbivore eating sea grasses and algae. They tend to feed in low energy marine pastures. In some cases, green turtles migrate long distances between high energy beaches used for nesting and foraging grounds. Human threats include: oil spills, live bottom smothering with sediments and drilling fluids, dredging, coastal development, agricultural and industrial pollution, seagrass bed degradation, shrimp trawling and other fisheries, boat collisions, under water explosions, ingestion of marine debris, entanglement in marine debris, and poaching.

Potential Effects of Discharges Authorized by this Permit Reissuance

Whales

The reason for decline in numbers of most of the whale species is historic hunting. Hunting has ceased in the Gulf of Mexico and North Atlantic with the exception of a small amount of subsistence hunting for fin whales near Greenland.

As stated previously, existing threats to the endangered or threatened whale species include: entrapment or entanglement in fishing gear, collision with ships, habitat destruction such as dredging or sewer discharges, disturbance by vessels, acoustic and chemical pollution, military operations, and acoustic disturbance from ships, and aircraft. Issuance of the proposed permit and authorization of the discharges will have no affect on the threats of entrapment or entanglement in fishing gear or military operations. Authorization of the proposed discharges will not increase or decrease the potential effects of entanglement or entrapment in fishing gear or military operations. The other threats, which include: collision with ships, acoustic disturbance, habitat destruction, disturbance by vessels, and chemical pollution, can be indirectly associated with offshore oil and gas operations.

Chemical pollution is noted by the recovery plan for the blue whale as a threat to that species. It is not listed as a threat in the recovery plans for other whale species. Although the discharges which are proposed to be authorized will contain pollutants, sufficient controls, such as whole effect toxicity limits, will be required to protect the environment and mitigate potential effects on listed threatened or endangered whales.

Habitat destruction is a potential threat to several of the listed threatened or endangered whale species. Although actions such as dredge disposal are thought to have a more direct potential affect, the recovery plans for several of the species list oil and gas operations as a potential cause of habitat degradation, primarily due to ship traffic and acoustic disturbance. Since supply boat traffic is not expected to increase, the threat to listed whale species from

collision with or disturbance from vessels is not expected to change as a result of the proposed re-authorization of the discharges. Re-authorization of the other discharges, such as produced water and deck drainage would in no way result in an increase in boat traffic.

Turtles

Many of the threats to listed threatened or endangered turtle species are related to activities in coastal areas and will not be affected by the proposed discharges. Those threats include: poaching of turtles and eggs, development and human encroachment of nesting beaches, erosion of beaches, vehicular traffic on beaches, beach armoring, artificial lighting, mechanical beach cleaning, marina and dock development, coastal development, increased human presence, dredging, non-native vegetation, seagrass bed degradation, and agricultural pollution.

Other threats which may occur in the area covered under the general permit, which are not related to oil and gas extraction facilities or the proposed discharges, are: entanglement at sea, commercial and recreational fisheries, and shrimp trawling. The discharges authorized by the permit will not affect those threats to threatened or endangered turtle species.

Threats to the turtle species which could be related to oil and gas extraction activities in the area of coverage of the general permit include: vessel anchoring, underwater explosions such as explosive removal of old oil and gas platforms, oil development on live bottoms that disrupt or smother foraging grounds with sediments and drilling fluids, floating debris, oil spills, oil and tar discharged during pumping of bilges, industrial pollution, and boat collisions. Of those potential threats only oil development on live bottoms that disrupt or smother foraging grounds with sediments and drilling fluids and industrial pollution are directly relevant to the proposed discharges. As stated previously, the reissued permit contains controls to limit the quantity of pollutants which are discharged and prevent toxic effects in the receiving waters. The limits for retention of drilling fluids on discharged cuttings results in more dispersed drill cuttings discharges and reduces cuttings piles which could smother live bottoms. Additionally, offshore leases issued by the Minerals Management Service contain stipulations, such as requirements to shunt drilling discharges, which provide additional protection.

The other threats to the turtle species, such as anchoring, spills, and explosive removal of platforms, have previously been addressed by the Minerals Management Service in the Outer Continental Shelf lease sales and in lease stipulations placed on operators.

Fish

Discharges authorized by this permit will not affect the main human induced threats to the Gulf sturgeon of habitat destruction or commercial fishing. Causes of habitat degradation are: construction of dams which interfere with migration, ground water usage which diminish the natural flow to rivers, and dredging. Those factors occur in inland waters and not in the area of the Gulf of Mexico covered under the Outer Continental Shelf general permit. Commercial fishing is also not expected to change as a result of the discharges proposed to be authorized by

this general permit.

Adult sturgeon may occasionally occur, during the winter months, in the geographic area covered by the permit. However, most of the drilling conducted with synthetic based drilling fluids is expected to occur in deep water (greater than 1000 feet), which is beyond the range of the sturgeon. Hydrostatic test water discharges may occur in near shore waters where the Gulf sturgeon may be found; however, those discharges are highly intermittent and short term in nature. The permit contains requirements on those discharges that limit potential toxic effects to aquatic species, including the Gulf sturgeon. Produced water discharges also occur near shore; however, the whole effluent toxicity limits in the permit are now more stringent, due to requirements to comply with sub-lethal effects based limits. Therefore, the new permit is more protective of the Gulf sturgeon than the previous permit's environmental baseline which was concurred on by NMFS.

Permit Related Environmental Studies

The environmental impacts of the discharges authorized by the general permit have been examined in a number of studies. Those studies were required by EPA to determine whether the current permit requirements were sufficiently stringent to protect the marine environment and the associated threatened and endangered species. The main studies conducted under the auspices of the permit are the Gulf of Mexico Produced Water Bioaccumulation Study (1997), Gulf of Mexico Comprehensive Synthetic Based Muds Monitoring Program (2004), and Predicted Impacts from Offshore Produced Water Discharges of Hypoxia in the Gulf of Mexico (2006). Those studies have shown that the permit's limitations and conditions are protective of marine life and they support EPA's determination that issuance of the permit would have no adverse impact on threatened or endangered species. The synthetic based muds and hypoxia studies both demonstrated that the respective discharges do not have a significant environmental impact. More notable in terms of prey species that endangered species may ingest, the bioaccumulation study showed that pollutants from produced water discharges are not likely to accumulate in the tissue of marine life in the vicinity of discharging platforms. These studies have provided valuable information on the potential for discharges authorized by the permit to impact marine life and on whether additional restrictions may be needed. They have also supported EPA's determination that the authorized discharges are not likely to adversely affect threatened or endangered species.

Determination

Based on information described above, EPA Region 6 has determined that discharges authorized by the reissuance of the will have no effect on the Gulf sturgeon (*Acipenser oxyrinchus desotoi*); northern right whale (*Eubalaena glacialis*), blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), sei whale (*Balaenoptera borealis*), the

humpback whale (*Megaptera novaeangliae*) and the West Indian manatee (*Trichechus manatus latirostris*). EPA has determined that the proposed action **may affect but is unlikely to adversely affect** the sperm whale (*Physeter macrocephalus*), or the following listed turtles: Kemp's ridley (*Lepidochelys kempii*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), green (*Chelonia mydas*) nor is the proposed action likely to result in destruction or adverse modification of designated critical habitat.

NMFS most recently concurred with these determinations in 2004. Through the recent reissuance of the permit, EPA made several changes which add additional protections for the marine environment and threatened and endangered species. Most notably, the whole effluent toxicity limits were strengthened through the addition of requirements to protect against sub-lethal effects. The permit now requires operators of new cooling water intake structures to design and operate the structures so that impingement and entrainment of aquatic life are minimized. The addition of these more stringent permit conditions along with new information obtained in the studies mentioned above further support EPA's determination that issuance of the general permit may affect but is unlikely to adversely affect any threatened or endangered species or their critical habitat.

References

Continental Shelf Associates, Inc., *Final Report: Gulf of Mexico Comprehensive Synthetic Based Muds Monitoring Program*, Continental Shelf Associates, Jupiter, Florida, October 2004.

Continental Shelf Associates, Inc., *Gulf of Mexico Produced Water Bioaccumulation Study*, Continental Shelf Associates, Jupiter, Florida, April, 1997.

Limno-Tech, Inc., *Predicted Impacts from Offshore Produced Water Discharges on Hypoxia in the Gulf of Mexico*, Limno-Tech, Inc., Greensboro, North Carolina, July, 2006.

Minerals Management Service, *Gulf of Mexico Deepwater Operations and Activities, Environmental Assessment*, Minerals Management Service, OCS Region, New Orleans, May, 2000.

Minerals Management Service, *Environmental Impacts of Synthetic Based Drilling Fluids*, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, August, 2000.

Minerals Management Service, *Gulf of Mexico OCS Oil and Gas Lease Sales: 2007 – 2012 Final Environmental Impact Statement*, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, Louisiana, April, 2007.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1991. *Recovery Plan for the U.S. Population of the Atlantic Green Turtle (Chelonia mydas)*. National Marine Fisheries Service, Washington, D.C.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1992. *Recovery Plan for Leatherneck Turtles (Dermochelys coriacea) in the U.S. Caribbean, Atlantic, and Gulf of Mexico*. National Marine Fisheries Service, Washington, D.C.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1991. *Recovery Plan for the U.S. Population of Loggerhead Turtle (Caretta caretta)*. National Marine Fisheries Service, Washington, D.C.

National Marine Fisheries Service. 1991. *Recovery Plan for the Humpback whale (Megaptera novaeangliae)*. Prepared by the Humpback Whale Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 105 pp.

National Marine Fisheries Service. 1998. *Recovery Plan for the blue whale (Balaenoptera musculus)*. Prepared by Reeves R.R., P.J. Clapham, R.L. Brownell, Jr., and G.K. Silber for the National Marine Fisheries Service, Silver Spring, MD. 42 pp.

National Marine Fisheries Service. 1991. *Recovery Plan for the Northern Right Whale (Eubalaena glacialis)*. Prepared by the Right Whale Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 86 pp.

National Marine Fisheries Service. *Biological Opinion on the Effects of the Five-Year Outer Continental Shelf Oil and Gas Leasing Program (2007-2012) in the Central and Western Planning Areas of the Gulf of Mexico*, National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, Florida, July, 2007.

R. Reeves, G. Silber, and P. Payne. *Draft Recovery Plan for the Fin Whale (Balaenoptera physalus) and Sei Whale (Balaenoptera borealis)*. Office of Protected Resources, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Silver Spring, Maryland, July, 1998.

Record of Communication, Scott Wilson (EPA) and Dennis Clems (NMFS), July 31, 2007.

U.S. Environmental Protection Agency, *Proposed Modification to the NPDES General Permit for New and Existing Sources in the Oil and Gas Extraction Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico (Permit No. GMG290000)*, Region 6, April 27, 2001.

U.S. Environmental Protection Agency, *Effluent Limitations Guidelines and New Source Performance Standards for the Oil and Gas Extraction Point Source Category*; OMB Approval Under the Paperwork Reduction Act: Technical Amendment. 66 FR 6850, Office of Water, January 22, 2001.

U.S. Environmental Protection Agency, *Fact Sheet and Supplemental Information for the*

Proposed Modification of the Western Gulf of Mexico OCS General Permit (Permit No. GMG290000), Region 6, April 27, 2001.

U.S. Environmental Protection Agency, *Development Document for Final Effluent Limitations Guidelines and Standards for Synthetic-Based Drilling Fluids and other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point Source Category*, EPA-821-B-00-013, Office of Water, December, 2000.

U.S. Environmental Protection Agency, *Environmental Assessment of Proposed Effluent Limitations Guidelines and Standards for Synthetic Based Drilling Fluids and Other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Category*, EPA-821-B-98-019, Office of Water, February, 1999. <http://www.epa.gov/ostwater/guide/sbf/final/env.html>

U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission. 1995. *Gulf Sturgeon Recovery Plan*. Atlanta, Georgia. 170 pp.

U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1992. *Recovery Plan for the Kemp's Ridley Sea Turtle (Lepidochelys kempii)*. National Marine Fisheries Service, Washington, D.C.